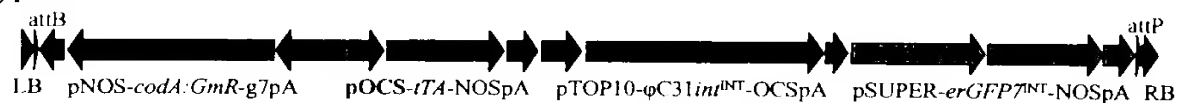


FIGURE 1

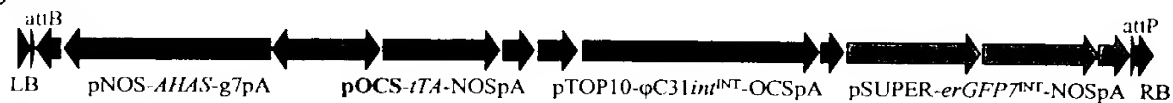
A) pBPS EW051 T-DNA



B) pBPS EW151 T-DNA



C) Monocot T-DNA



D) T-DNA Foot Print



1 kb

FIGURE 2

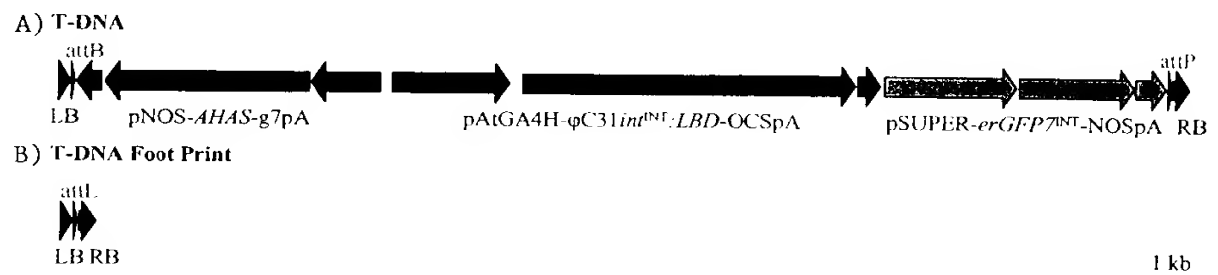


FIGURE 3

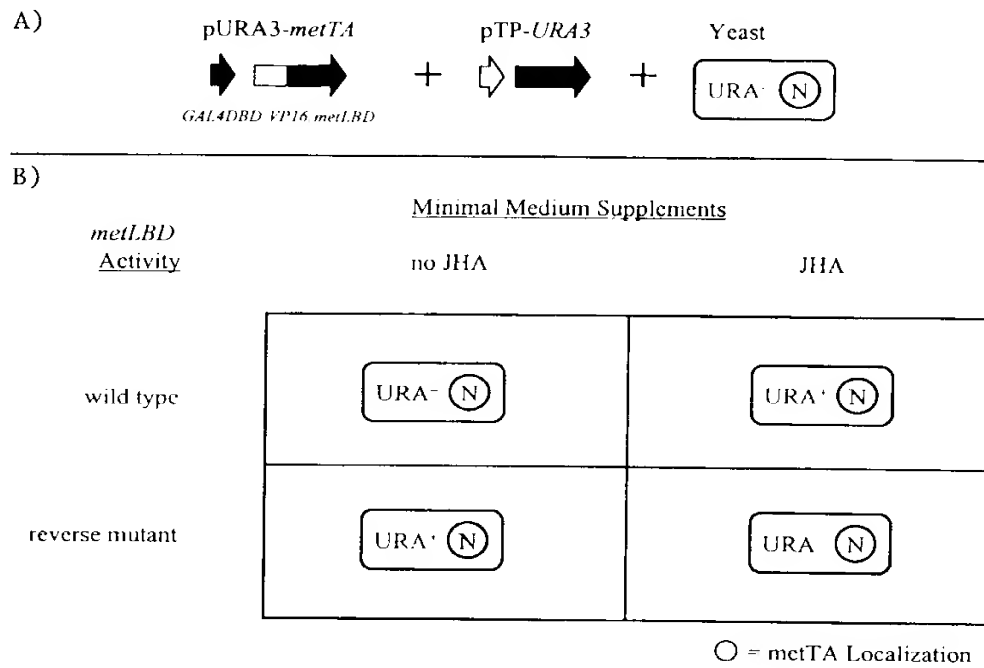


FIGURE 4

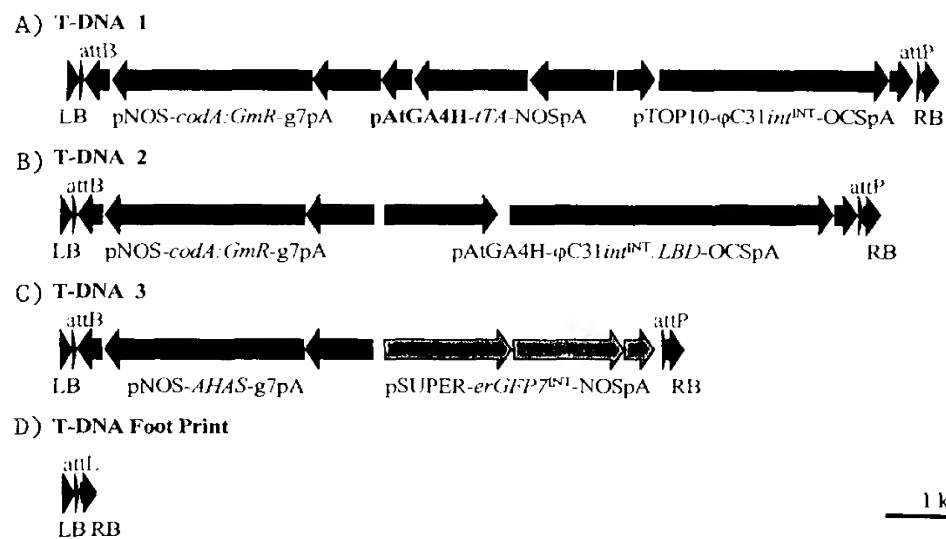


FIGURE 5

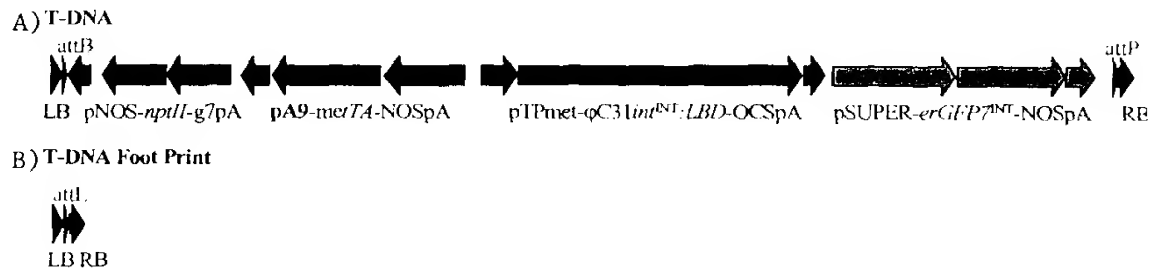


FIGURE 6

Nucleotide sequence of ϕ C31_{int}^{INT}

1 ATGGCACAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
61 TATATAATAA TTATCATTA TTAGTAGTAA TATAATAITTT CAAATATTTT TTTCAAAATA
121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGTAGTTTAT AAGTGTGTAT ATTTTAATTT
181 ATAACTTTTT TAATATATGA CAAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
241 CGTCAGTCGC GCGAGCGCGA GAATTCGAGC GCAGCAAGCC CAGCGACACA GCGTAGCGCC
301 AACGAAGACA AGGCGGCCGA CCTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTTCAGG
361 TTCGTCGGGC ATTTTCAGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCG
421 GAGTTCGAAC GCATCCTGAA CGAATGCCGC GCCGGGCGGC TCAACATGAT CATTGTCTAT
481 GACGTGTCGC GCTTCTCGCG CCTGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTCCGGCA GGGAAACGTC
601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGG
721 AAGGCGCCTT ACGGCTTCGA GCTTGTTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
781 ATGGTCAATG TCGTCATCAA CAAGCTTGCG CACTCGACCA CTCCCCTTAC CGGACCCTTC
841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
961 CGCATGGACG CTGACGCCGT GCCGACCCGG GGCGAGACGA TTGGGAAGAA GACCGCTTCA
1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCCGCGTAT TCGGGGCTTC
1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
1141 TACCGCATTC AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
1201 ATCGAGCCCG CTGAGTGGTA TGAGCTTCAG GCGTGGTTGG ACGGCAGGGG GCGCGGCAAG
1261 GGGCTTTCCC GGGGGCAAGC CATTCGTGTC GCCATGGACA AGCTGTACTG CGAGTGTGGC
1321 GCCGTCATGA CTTCTGAAGC CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTCGC
1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
1441 GCGGCACTCG ACAAGTTCGT TCGGGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCGAC GCTTCGGCAA GCTCACTGAG
1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGCGCGT ACGACGGACC CGTTGGCAGG
1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGTCCGGC AGCAAGGGGC GGAAGAGCGG
1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGCTTCCCC TTGACCAATG GTTCCCCGAA
1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GCGCGCGCTC AGTAGACGAC
1861 AAGCGCGTGT TCGTCGGGCT CTTCTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 7

Nucleotide sequence of ϕ C31_{int}*^{INT}

1 ATGGCACAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
61 TATATAATAA TTATCATTAA TTAGTAGTAA TATAATATTT CAAATATTTT TTTCAAAATA
121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGTAGTTTAT AAGTGTGTAT ATTTTAATTT
181 ATAACTTTTT TAATATATGA CCAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
241 CGTCAGTCGC GCGAGCGCGA GAATAGCAGT GCAGCAAGCC CAGCGACACA GCGTAGCGCC
301 AACGAAGACA AGGCGGCCGA CCTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTCAAG
361 TTCGTCGGGC ATTTTCAGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCC
421 GAGTTCGAAC GCATCCTGAA CGAATGCCGC GCCGGGCGGC TCAACATGAT CATTGTCTAT
481 GACGTGTGCG GCTTCTCGCG CCTGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTTCCGGCA GGGAAACGTC
601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGG
721 AAGGCGCCTT ACGGCTTCGA GCTTGTTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
781 ATGGTCAATG TCGTCATCAA CAAGTTAGCG CACTCGACCA CTCCCCTTAC CGGACCCCTC
841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
961 CGCATGGACG CTGACGCCGT GCCGACCCGG GCGGAGACGA TTGGGAAGAA GACCGCTTCA
1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCCGCGTAT TCGGGGCTTC
1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
1141 TACCGCATTC AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
1201 ATCGAGCCCG CTGAGTGGTA TGAGCTTCAG GCGTGGTTGG ACGGCAGGGG GCGCGGCAAG
1261 GGGCTTTCCC GGGGGCAAGC CATTCTGTCC GCCATGGACA AGCTGTACTG CGAGTGTGGC
1321 GCCGTCAATG CTTCGAAGCG CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTGCG
1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
1441 GCGGCACTCG ACAAGTTCGT TCGGGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCCGAC GCTTCGGCAA GCTCACTGAG
1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGAGCTT ACGACGGACC CGTTGGCAGG
1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGCTCCGGC AGCAAGGGGC GGAAGAGCGG
1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGTTGCCCC TTGACCAATG GTTCCCCGAA
1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GCGCGCGCTC AGTAGACGAC
1861 AAGCGCGTGT TCGTCGGGCT CTTCGTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 8

Nucleotide sequence of pBPS EW051 T-DNA Region

Sequence Molecule Features:

Start	End	Name
3	217	Left T-DNA Border
225	259	attB
485	273	g7pA (terminator)
2288	519	<i>codA-aacCI</i> translational fusion gene
2898	2303	Nopaline Synthase Promoter
2925	3236	Octopine Synthase Promoter
3260	4267	tTA gene
4292	4558	Nopaline Synthase Terminator
4597	4933	Top10 promoter
4977	7007	ϕ C31 ^{int} gene
7027	7221	Octopine Synthase Terminator
7253	8392	Super Promoter
8413	9405	<i>erGFP7</i> ^{int} gene
9411	9677	Nopaline Synthase Terminator
9690	9728	attP
9735	9880	Right T-DNA Border

Sequence:

```

1 TGGTGATTTT GTGCCGAGCT GCCGGTCGGG GAGCTGTTGG CTGGCTGGTG GCAGGATATA
61 TTGTGGTGTA AACAAATTGA CGCTTAGACA ACTTAATAAC ACATTGCGGA CGTCTTTAAT
121 GTACTGAATT AACATCCGTT TGATACTTGT CTAAAATTGG CTGATTTCGA GTGCATCTAT
181 GCATAAAAAC AATCTAATGA CAATTATTAC CAAGCAGGAT CACCGGTGCC AGGGCGTGCC
241 CTTGGGCTCC CCGGGCGCGG CCCGGGCAAT TCCCATCTTG AAAGAAATAT AGTTTAAATA
301 TTTATTGATA AAATAAGTCA GGTATTATAG TCCAAGCAAA AACATAATTT ATTGATGCAA
361 AGTTTAAATT CAGAAATATT TCAATAACTG ATTATATCAG CTGGTACATT GCCGTAGATG
421 AAAGACTGAG TGCGATATTA TGTGTAATAC ATAAATTGAT GATATAGCTA GCTTAGCTCA
481 TCGGGGGATC CTTAATCGAC TCTAGCTAGA ACGAATTGTT AGGTGGCGGT ACTTGGGTCG
541 ATATCAAAGT GCATCACTTC TTCCCGTATG CCCAACTTTG TATAGAGAGC CACTGCGGGA
601 TCGTCACCGT AATCTGCTTG CACGTAGATC ACATAAGCAC CAAGCGCGTT GGCCTCATGC
661 TTGAGGAGAT TGATGAGCGC GGTGGCAATG CCCTGCCTCC GGTGCTCGCC GGAGACTGCG
721 AGATCAGATA TATAGATCTC ACTAGCGGCG TCGTCAAACC TGGGCAGAAC GTAAGCCGCG
781 AGAGCGCCAA CAACCGCTTC TTGGTCGAAG GCAGCAAGCG CGATGAATGT CTTACTACGG
841 AGCAAGTTCC CGAGGTAATC GGAGTCCGGC TGATGTTGGG AGTAGGTGGC TACGTCTCCG
901 AACTCACGAC CGAAAAGATC AAGAGCAGCC CGCATGGATT TGACTTGGTC AGGGCCGAGC
961 CTACATGTGC GAATGATGCC CATCCTCGAG AAACGTTTGT AATCGATGGC TTCTGGCTGC
1021 TCCAGATATA CGGTGGTTTG TGCCGGTTGT GTGCTGGCAA TCACCTTGCC GCCACGTACC
1081 GAATAACGTA CCGGAACCTG ACGGCGCAGC GCATCAAACC CATTTCAGC CGGCAGGATA
1141 ATCAGGTTGG CGCTGTTTCC GGCGGCAATG CCGTAATCCT GCAAATTCAA CGTCCTTGCG
1201 CTGTGGTGGG TGATTAAATT CAGGCCATCG TTAATCTGCC CGTAGCCCAT CAACTGGCAA
1261 ACATGCAGCC CCATATGCAG CACTTGCAGC ATATTCGCCG TTCCAGCGG ATACCACGGA
1321 TCGAAGACAT CATCGTGACC AAAGCAGACG TTAATGCCG ACTCCAGCAT CTCTTTAACC
1381 CGCGTGATGC CGCGACGTTT TGGATACGTA TCGAAACGTC CTTGCAGATG AATATTGACC
1441 AGCGGGTTGG CGACAAAGTT AATACCGGAC ATTTTCAGCA AGCGGAACAG GCGTGAGGTA
1501 TACGCCCCGT TATAGGAGTG CATTGCCGTG GTGTGGCTGG CGGTGACTCG CGCGCCCATG
1561 CTTTCATGGT GCGCCAGGGC AGCAACGGT TCGACAAAGC GCGACTGCTC GTCATCGATC
1621 TCATCACAGT GAACGTCGAT GAGACGGTCG TATTTTTCG CAGGGCGAA GGTTTTATGC
1681 AGCGACTCCA CGCCGTATTC ACGGGTAAAT TCAAAATGCG GAATCGCCCC CACTACATCT
1741 GCCCCTAAGC GTAACGCCTC TTCCAGCAAC GCTTCACCGT TGGGATACGA CAAAATCCCT
1801 TCCTGAGGGA AGGCGACGAT TTGCAGATCA ATCCACGGCG CGACTTCCTG CTTCACTTCC
1861 AGCATTGCTT TCAGCGCAGT TAGCGTTGCA TCCGAAACAT CGACATGGGT ACGCACATGC
1921 TGAATGCCGT TGGCAATCTG CCATTTCAGC GTTGGCCATG CGCGTTGTTT CACATCGTCA

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FIGURE 8 CONTINUED

1981 TGGGTAAATA ACGCTTTGCG CTCGGCCCCAG CGTTCAATGC CTTCAAACAG CGTGCCGGAC
 2041 TGATTCCAGT TCGGTTGTCC GCGGTTTGC GTGGTGTCCA GGTGAATATG TGGCTCCACA
 2101 AACGGCGGTA TAACTAAACC TTGTTGCGCA TCCAGGCTGT TTTCAGTTAT GGGCATCACG
 2161 CCGGATTGCG CATCAATGGC GCTGATTTTT CCGTCCTGCA GATGAATCTG CCACAGCCCC
 2221 TCTTCGCCTG GTAACCGGGC GTTAATAATT GTTTGTAAAG CGTTATTCGA CACTGTTAGC
 2281 CTCCCCATGG AGATCTGGAT TGAGAGTGAA TATGAGACTC TAATTGGATA CCGAGGGGAA
 2341 TTTATGGAAG TCAGTGGAGC ATTTTGTACA AGAAATATTT GCTAGCTGAT AGTGACCTTA
 2401 GGCGACTTTT GAACGCGCAA TAATGGTTTC TGACGTATGT GCTTAGCTCA TTAAACTCCA
 2461 GAAACCCGCG GCTGAGTGGC TCCTTCAACG TTGCGGTTCT GTCAGTTCCA AACGTAAAC
 2521 GGCTTGTCCC GCGTCATCGG CGGGGGTTCAT AACGTGACTC CTTAATTCT CCGTCTATGA
 2581 TCTTGATCCC CTGCGCCATC AGATCCTTGG CGGCAAGAAA GCCATCCAGT TTACTTTGCA
 2641 GGGCTTCCCA ACCTTACCAG AGGGCGCCCC AGCTGGCAAT TCCGGTTCG TTTGTGTCCA
 2701 TAAAACCGCC CAGTCTAGCT ATCGCCATGT AAGCCCACTG CAAGCTACCT GCTTTCTCTT
 2761 TGCGCTTGCG TTTTCCCTTG TCCAGATAGC CCAGTAGCTG ACATTCATCC GGGGTCAGCA
 2821 CCGTTTCTGC GGAAGTGGCTT TCTACGTGTT CCGCTTCCTT TAGCAGCCCT TCGCGCCTGA
 2881 GTGCTTGCGG CAGCGTGAAG CTTGGCGCGC CAAGCTTGCA TGCCCGCTCT TAGCCGTACA
 2941 ATATTACTCA CCGGTGCGAT GCGCCCCATC GTAGGTGAAG GTGGAAATTA ATGATCCATC
 3001 TTGAGACCAC AGGCCACAA CAGCTACCAG TTCTCTCAAG GGTCCACCAA AAACGTAAGC
 3061 GCTTACGTAC ATGGTCGATA AGAAAAGGCA ATTTGTAGAT GTTAACATCC AACGTCGCTT
 3121 TCAGGGATCC TTTTACCAG CAATCATCC ACATTGATGG TAGGCAGAAA GTTAAAGGAT
 3181 TATCGCAAGT CAATACTTGC CCATTCATTG ATCTATTTAA AGGTGTGGCC TCAAGGAGAT
 3241 CCCCAGGCGG GCAATTCATA TGTCTAGATT AGATAAAAGT AAAGTGATTA ACAGCGCAT
 3301 AGAGCTGCTT AATGAGGTCG GAATCGAAGG TTTAACAACC CGTAAACTCG CCCAGAAGCT
 3361 AGGTGTAGAG CAGCCTACAT TGTATTGGCA TGTAATAAAT AAGCGGGCTT TGCTCGACGC
 3421 CTTAGCCATT GAGATGTTAG ATAGGCACCA TACTCACTTT TGCCCTTTAG AAGGGGAAAG
 3481 CTGGCAAGAT TTTTACGTA ATAACGCTAA AAGTTTGA TAGTGCTTAC TAAGTCATCG
 3541 CGATGGAGCA AAAGTACATT TAGGTACACG GCCTACAGAA AAACAGTATG AAACCTCTCGA
 3601 AAATCAATTA GCCTTTTAT GCCAACAAGG TTTTCTACTA GAGAATGCAT TATATGCACT
 3661 CAGCGCTGTG GGGCATTTTA CTTTAGGTTG CGTATTGGAA GATCAAGAGC ATCAAGTCGC
 3721 TAAAGAAGAA AGGGAAACAC CTACTACTGA TAGTATGCCG CCATTATTAC GACAAGCTAT
 3781 CGAATTATTT GATCACCAAG GTGCAGAGCC AGCCTTCTTA TTCGGCCTTG AATTGATCAT
 3841 ATGCGGATTA GAAAAACAAC TTAATGTGA AAGTGGGTCC GCGTACAGCC GCGCGCTAC
 3901 TAGCGCGCAA ACTAGGATAA ATTATCGCGC GCGGTGTCAT CTATGTTACT AGATCGGGAA
 3961 CGAAGAGGCG GGGCTGGCGG CTCCGCGCCT GTCCTTCTC CCCGCGGGAC ACACGCGCAG
 4021 ACTGTCGACG GCGCCCCCGA CCGATGTCAG CTTGGGGGAC GAGCTCCACT TAGACGGCGA
 4081 GGACGTGGCG ATGGCGCATG CCGACGCGCT AGACGATTTC GATCTGGACA TGTGGGGGA
 4141 CGGGGATTCC CCGGGTCCGG GATTACCCC CCACGACTCC GCGCCCTACG GCGCTCTGGA
 4201 TATGGCCGAC TTCGAGTTTG AGCAGATGTT TACCGATGCC CTTGGAATTG ACGAGTACGG
 4261 TGGGTAGGGG GCGCGAGGAT CTCGAGCAGC TCGAATTTCC CCGATCGTTC AAACATTTGG
 4321 CAATAAAGTT TCTTAAGATT GAATCCTGTT GCCGGTCTTG CGATGATTAT CATATAATTT
 4381 CTGTTGAATT ACGTTAAGCA TGTAATAATT AACATGTAAT GCATGACGTT ATTTATGAGA
 4441 TGGGTTTTTA TGATTAGAGT CCCGCAATTA TACATTTAAT ACGCGATAGA AAACAAAATA
 4501 TAGCGCGCAA ACTAGGATAA ATTATCGCGC GCGGTGTCAT CTATGTTACT AGATCGGGAA
 4561 TTCCTTAATT AAGAATTCGA GCTCGGTACC GAGCTCGACT TTCACTTTTC TCTATCACTG
 4621 ATAGGGAGTG GTAAACTCGA CTTTCATTTT CTCTATCACT GATAGGGAGT GGTAAACTCG
 4681 ACTTTCATT TTCTCTATCA CTGATAGGGA GTGGTAAACT CGACTTTCAC TTTTCTCTAT
 4741 CACGGATAGG GAGTGGTAAA CTCGACTTTC ACTTTTCTCT ATCACTGATA GGGAGTGGTA
 4801 AACTCGACTT TCACTTTTCT CTATCACTGA TAGGGAGTGG TAAACTCGAC TTTCACTTTT
 4861 CTCTATCACT GATAGGGAGT GGTAAACTCG AGATAGAGTG ATCTAGTCTT CGCAAGACCC
 4921 TTTACGTATA TAAGGCCCTT CTAGACATTT GCTCGAGCCC GGGGATCCAT ATGGCCATGG
 4981 CACAAGGGGT TGTGACCGGG GTGGATACGT AAGTTTCTGC TTCTACCTTT GATATATATA
 5041 TAATAATTAT CATTAATTAG TAGTAAATATA ATATTCAAA TATTTTTC AAAATAAAAG
 5101 AATGTAGTAT ATAGCAATTG CTTTCTGTA GTTATAAGT GTGTATATTT TAATTTATAA
 5161 CTTTTCTAAT ATATGACCAA AATTTGTTGA TGTGCAGGTA CGCGGGTGCT TACGACCGTC

FIGURE 8 CONTINUED

5221 AGTCGCGCGA GCGCGAGAAT TCGAGCGCAG CAAGCCCAGC GACACAGCGT AGCGCCAACG
 5281 AAGACAAGGC GGCCGACCTT CAGCGCGAAG TCGAGCGCGA CGGGGGCCGG TTCAGGTTCTG
 5341 TCGGGCATT T CAGCGAAGCG CCGGGCACGT CGGCGTTCGG GACGGCGGAG CGCCCGGAGT
 5401 TCGAACGCAT CCTGAACGAA TGCCGCGCCG GCGGGCTCAA CATGATCATT GTCTATGACG
 5461 TGTCGCGCTT CTCGCGCCTG AAGGTCATGG ACGCGATTCC GATTGTCTCG GAATTGCTCG
 5521 CCCTGGGCGT GACGATTGTT TCCACTCAGG AAGGCGTCTT CCGGCAGGGA AACGTCATGG
 5581 ACCTGATTCA CCTGATTATG CGGCTCGACG CGTCGCACAA AGAATCTTCG CTGAAGTCGG
 5641 CGAAGATTCT CGACACGAAG AACCTTCAGC GCGAATTGGG CCGGTACGTC GGCGGGAAGG
 5701 CGCCTTACGG CTTCGAGCTT GTTTCGGAGA CGAAGGAGAT CACGCGCAAC GGCCGAATGG
 5761 TCAATGTCTG CATCAACAAG CTTGCGCACT CGACCACTCC CTTACCGGA CCCTTCGAGT
 5821 TCGAGCCCGA CGTAATCCGG TGGTGGTGGC GTGAGATCAA GACGCACAAA CACCTTCCCT
 5881 TCAAGCCGGG CAGTCAAGCC GCCATTACC CGGGCAGCAT CACGGGGCTT TGTAAGCGCA
 5941 TGGACGCTGA CGCCGTGCCG ACCCGGGCAG AGACGATTGG GAAGAAGACC GCTTCAAGCG
 6001 CCTGGGACCC GGCAACCGTT ATGCGAATCC TTCGGGACCC GCGTATTGCG GGCTTCGCCG
 6061 CTGAGGTGAT CTACAAGAAG AAGCCGGACG GCACGCCGAC CACGAAGATT GAGGGTTACC
 6121 GCATTCAGCG CGACCCGATC ACGCTCCGGC CGGTCGAGCT TGATTGCGGA CCGATCATCG
 6181 AGCCCGCTGA GTGGTATGAG CTTCAAGCGT GGTGGACGG CAGGGGGCGC GGCAAGGGGC
 6241 TTTCCCGGGG GCAAGCCATT CTGTCCGCCA TGGACAAGCT GTACTGCGAG TGTGGCGCCG
 6301 TCATGACTTC GAAGCGCGGG GAAGAATCGA TCAAGGACTC TTACCGCTGC CGTCGCCGGA
 6361 AGGTGGTCTGA CCCGTCCGCA CCTGGGCAGC ACGAAGGCAC GTGCAACGTC AGCATGGCGG
 6421 CACTCGACAA GTTCGTTGCG GAACGCATCT TCAACAAGAT CAGGCACGCC GAAGGCGACG
 6481 AAGAGACGTT GGCGCTTCTG TGGGAAGCCG CCCGACGCTT CGGCAAGCTC ACTGAGGCGC
 6541 CTGAGAAGAG CGGCGAACGG GCGAACCTTG TTGCGGAGCG CGCCGACGCC CTGAACGCCC
 6601 TTGAAGAGCT GTACGAAGAC CGCGCGGCAG GCGCGTACGA CGGACCCGTT GGCAGGAAGC
 6661 ACTTCCGGAA GCAACAGGCA GCGCTGACG TCCGGCAGCA AGGGGCGGAA GAGCGGCTTG
 6721 CCGAACTTGA AGCCGCCGAA GCCCGAAGC TTCCCCTTGA CCAATGGTTC CCCGAAGACG
 6781 CCGACGCTGA CCCGACCGGC CTAAGTCGT GGTGGGGGCG CGCGTCAGTA GACGACAAGC
 6841 GCGTGTTCTG CGGGCTCTTC GTAGACAAGA TCGTTGTCAC GAAGTCGACT ACGGGCAGGG
 6901 GGCAGGGAAC GCCCATCGAG AAGCGCGCTT CGATCACGTG GCGAAGCCG CCGACCGACG
 6961 ACGACGAAGA CGACGCCAG GACGGCACGG AAGACGTAGC GCGTAGCTG CAGCTCGACG
 7021 CATGCCCTGC TTAAATGAGA TATGCGAGAC GCCTATGATC GCATGATATT TGCTTTCAAT
 7081 TCTGTTGTGC ACGTTGTAAA AAACCTGAGC ATGTGTAGCT CAGATCCTTA CCGCCGGTTT
 7141 CGGTTCAATC TAATGAATAT ATCACCGGT ACTATCGTAT TTTTATGAAT AATATTCTC
 7201 GTTCAATTTA CTGATTGTCC AAGCTTCTG CAGGAAGCTT TGGGCGGATC CTCTAGATT
 7261 GACGGTATCG ATAAGCTCGC GGATCCCTGA AAGCGACGTT GGATGTTAAC ATCTACAAAT
 7321 TGCTTTTCT TATCGACCAT GTACGTAAGC GCTTACGTT TTGGTGGACC CTTGAGGAAA
 7381 CTGGTAGCTG TTGTGGGCCT GTGGTCTCAA GATGGATCAT TAATTTCCAC CTTACCTAC
 7441 GATGGGGGGC ATCGCACCGG TGAGTAATAT TGTACGGCTA AGAGCGAATT TGGCCTGTAG
 7501 GATCCCTGAA AGCGACGTTG GATGTTAACA TCTACAAATT GCCTTTTCTT ATCGACCATG
 7561 TACGTAAGCG CTTACGTTTT TGGTGGACCC TTGAGGAAAC TGGTAGCTGT TGTGGGCTG
 7621 TGGTCTCAAG ATGGATCATT AATTTCCACC TTCACCTACG ATGGGGGGCA TCGCACCGGT
 7681 GAGTAATATT GTACGGCTAA GAGCGAATTT GGCTGTAGG ATCCCTGAAA GCGACGTTGG
 7741 ATGTTAACAT CTACAAATTG CTTTTTCTA TCGACCATGT ACGTAAGCGC TTACGTTTTT
 7801 GGTGGACCCT TGAGGAAACT GGTAGCTGTT GTGGGCTGT GGTCTCAAGA TGGATCATTA
 7861 ATTTCCACCT TCACCTACGA TGGGGGGCAT CGCACCGGTG AGTAATATTG TACGGCTAAG
 7921 AGCGAATTTG GCCTGTAGGA TCCGCGAGCT GGTCAATCCC ATTGCTTTTG AAGCAGCTCA
 7981 ACATTGATCT CTTTCTCGAT CGAGGGAGAT TTTTCAAATC AGTGCGCAAG ACGTGACGTA
 8041 AGTATCCGAG TCAGTTTTTA TTTTCTACT AATTTGGTCG TTTATTTCCG CGTGTAGGAC
 8101 ATGGCAACCG GGCCTGAATT TCGCGGGTAT TCTGTTTCTA TTCCAACCTT TTCTTGATCC
 8161 GCAGCCATTA ACGACTTTTG AATAGATACG CTGACACGCC AAGCCTCGCT AGTCAAAAAGT
 8221 GTACCAAACA ACGCTTTACA GCAAGAACGG AATGCGCGTG ACGCTCGCGG TGACGCCATT
 8281 TCGCCTTTTC AGAAATGGAT AATAGCCTT GCTTCTATT ATATCTTCCC AAATTACCAA
 8341 TACATTACAC TAGCATCTGA ATTTCAATC CAATCTCGAT ACACCAAATC GAAGATCCAA
 8401 GGAGATATAA CAATGAAGAC TAATCTTTTT CTCTTCTCA TCTTTTCACT TCTCCTATCA

FIGURE 8 CONTINUED

8461 TTATCCTCGG CCGAATTGTA CGTAAGTTTC TGCTTCTACC TTTGATATAT ATATAATAAT
8521 TATCATTAAAT TAGTAGTAAT ATAATATTTT AAATATTTTT TTCAAAATAA AAGAATGTAG
8581 TATATAGCAA TTGCTTTTCT GTAGTTTATA AGTGTGTATA TTTTAATTTA TAACTTTTCT
8641 AATATATGAC CAAAATTTGT TGATGTGCAG GTACAATTCA GTAAAGGAGA AGAACTTTTC
8701 ACTGGAGTTG TCCCAATTCT TGTGGAATTA GATGGTGATG TTAATGGGCA CAAATTTTCT
8761 GTCAGTGGAG AGGGTGAAGG TGATGCAACA TACGGAAAAC TTACCCTTAA ATTTATTTGC
8821 ACTACTGGAA AACTACCTGT TCCATGGCCA ACACTTGTC AACTTTTCAC TTATGGTGTT
8881 CAATGCTTTT CAAGATACCC AGATCATATG AAGCGGCACG ACTTCTTCAA GAGCGCCATG
8941 CCTGAGGGAT ACGTGCAGGA GAGGACCATC TCTTTCAAGG ACGACGGGAA CTACAAGACA
9001 CGTGCTGAAG TCAAGTTTGA GGGAGACACC CTCGTCAACA GGATCGAGCT TAAGGGAATC
9061 GATTTCAAGG AGGACGGAAA CATCCTCGGC CACAAGTTGG AATACAACCTA CAACTCCCAC
9121 AACGTATACA TCACGGCAGA CAAACAAAAG AATGGAATCA AAGCTAACTT CAAAATTAGA
9181 CACAACATTG AAGATGGAAG CGTTCAACTA GCAGACCATT ATCAACAAAA TACTCCAATT
9241 GGCGATGGCC CTGTCCTTTT ACCAGACAAC CATTACCTGT CCACACAATC TGCCCTTTTCG
9301 AAAGATCCCA ACGAAAAGAG AGACCACATG GTCCTTCTTG AGTTTGTAAC AGCTGCTGGG
9361 ATTACACATG GCATGGATGA ACTATACAAA CATGATGAGC TTTAAGAGCT CGAATTTCCC
9421 CGATCGTTCA AACATTTGGC AATAAAGTTT CTTAAGATTG AATCCTGTTG CCGGTCTTGC
9481 GATGATTATC ATATAATTTT TGTGGAATTA CGTTAAGCAT GTAATAATTA ACATGTAATG
9541 CATGACGTTA TTTATGAGAT GGGTTTTTAT GATTAGAGTC CCGCAATTAT ACATTTAATA
9601 CGCGATAGAA AACAAAATAT AGCGCGCAAA CTAGGATAAA TTATCGCGCG CGGTGTCATC
9661 TATGTTACTA GATCGGGAAT TCGCGATCGC CCCAACTGGG GTAACCTTTG AGTTCTCTCA
9721 GTTGGGGGAG ATCTGATTGT CGTTTCCCGC CTCAGTTTA AACTATCAGT GTTTGACAGG
9781 ATATATTGGC GGGTAAACCT AAGAGAAAAG AGCGTTTATT AGAATAATCG GATATTTAAA
9841 AGGGCGTGAA AAGGTTTATC CGTTCGTCCA TTTGTATGTC

FIGURE 9

Nucleotide sequence of *Arabidopsis thaliana* GA4H promoter region

1 TGTAATGAT AGGGATTGAA ACATCATCCT ATCGTTGACC AAAAATTTCA CTGCGTGCTA
61 TATAAATAC TATATATGTT ACCCTTTAAC TGATGAAAAT GTAAAGAGAC AAGGCAGCAC
121 CGTTTATCAT CAGACCAGTT TCGAGAGTGT TCCTGCATCG TTGGGCTCCC TCCTCAATTT
181 TGTCTACGTG ATTATATATC ATATCGTCTA CAAACAAAAT AAATACAATT CTATCATATG
241 AATATGTGAT CATCGATGAT CGATCAATAT ATGTTTTTCGA GGTGACGTAT ATAGTATATT
301 TCCGTAGAGA CGGCGAAGAA CATGATATCT CTGCATGCCT CCAATCAAAT CTTTACACTT
361 CATCCTTCTT CGTTACTTGT TCAGTTGTTT CTTTCTAATC CCGACAACCC TTAATTTGTA
421 TTTCTATATT AGATCGAAAT ATCTCATTTG TGATAAATAA AATAAAAAAA ATCAAAGAAA
481 GCTATAGAGA AGCTGCGTGC ATGCATGGGT TGGCGATGTT TGGCTTGTTA TGTITGGCTT
541 GTTATGTGGC ATTATCTGTA TGTATATTAC CCTAAATCAC ATCTACGACA TTTCCCTCGA
601 TCTTCAAAAT ATGCCAGCAA TCTTCATGTT TCCTCATATC TCTTAACATT GGAAAATGTC
661 TTTTGACCTC TTTTGATGTA TTTTAAATA CTTCGAGCTC ATCTATATTA CAAATCATTC
721 ATGGTGAATT ATTGTCCAGC CAATAGAATA GAAATCTGAA TATAATGTGT ACCACATCTT
781 TTATGTAATT TATACGATAT TCTTTTTTCT GAGAATGATC AAATAACAAC ATGCATGAAT
841 TGCTGCCAGA AAACGTCAGA TTGATCAGTT ATCACTACAA TTATCAATTA ACTAGTAAAT
901 AGTATCAAAA TGTACGTAGT GCCCATCTAT AGCTAGCTAA GGAGGACTCC GGATGTAGAG
961 AAAAGCTAAA ATGTGACTTG CTAGAGTTGT ATTATATTGA ATTTTCTAAA CTAATAGTAT
1021 CTTTTTTTACA GATAATAATT TCCGGAAAAC CTATTAGATG TATAGATATA ACAATAAGCA
1081 TCGATACCAA CCTTTTACTT CCAAAAAAAA ATAAAAAAA AATGCCAAGA TGAGATAATT
1141 TTGTCAATTT CAATTAGTGG GAAAAAACA ATTGTCGTGT TATTTTGTAA CCAACGCATC
1201 TCAGTGAATG ATTTCCCAGT TCTTAAGATT TTAGGACATA CTTTCCCAGT AACATCTAAT
1261 CCGTTTGGGC ATAAACAAGA CAATTTGTAG TTATGTACAT TTCTTAGTGA TGTGTGTTGA
1321 AAAGATATGA ATCAATGAGG TCCGACATAT TTTGTCAATA CGTTAGTGGT GTTTCAAAAT
1381 AAATTTTGTAG TATATATATT AAAATAAGAC CAAAGGATAG GCTTTAGTGG TGTTCAGGT
1441 ATAGTTTTAA TAATCAATTC AAAATAAGTC GAAAGGATAT GTAAGATAGG CGTTATTTCA
1501 ACGTGGATCA TTATCAACCA TGTCAAAAAC GCATTTCAAC TCCTAGATGT GTTGTTAGTT
1561 ATATATGTTT CAAATGGAAT CGACCCAACA GAAAAAGAGA AAAAAACGTA AAAGGTTATG
1621 CGATTCCAGG GACGTCTCAT ATATATATAT ATTCCGATGA AATATAAATA TAATTATCGT
1681 GGTCTGTGAC AATAAATATG GAAATAGATG TGGAAATCAT GATCATGTGA AGAAGAAGAA
1741 GAACACGTGC AGATGAACTG CAAATGATAA TAATGTGCAT GTCCATGAGT TATGTACTTA
1801 TGTGTATTAT CTACGTGTTT TCCATACATA CATATATAA TCTTATATTA CTTTATGGTT
1861 TTGTCGTAAA AGTTACGTAG CATCAATAAT TGTGATTCGT TGCCATAAAC AGCACAAGTA
1921 TTGTAACGGT ATAAGGCTTG GCTCTCATGA TAAATGATA ACCCTTTTTT TCGTCGGAGA
1981 CAGACAAACG CATAAATCAC TAATTCTAAA CCGAGATGAT TGTCGATTTG TTTGCCATAT
2041 GCATAACTAG AATCTTCAGT TAATATTAAT TTTTGGTGTI TTCGATCGAA TAAAAAAA
2101 TAAACATTGC AATATTTCGA AATTTGTCGT CTTTCTTTT ATAACACTAG CAAGTGAGAG
2161 GCTGAGAGCC AAGTGGAACG TAAAAGACA ACATTAGATA TATATTATAT ATTGCTAAAT
2221 CTGTATTATT TCTTTTAAAC ATACGCAACT TTTGATTGGA AATCGTAAGT CGAAGGAAGG
2281 GCCTCGATTT ATGACGTACG CTTCGTGCCA AACAATTCCT CTTAGTTGA GGCCGGGGAA
2341 GACGAGTTTG TTGTTAGTGA GCGATGCCAT GGCATCAATG AACTCCCAA GGCCATATGT
2401 TCTGTAAAG GCTATTTTAG TTTTAAATTT TGTCTGATT AACTCAACCA CATGTTAAAT
2461 CAGATATCAT GTTAAACGAT ATTAGTTTTT AAACAAAATG ATTATCATAA AACGAAATTT
2521 ATGATGAAAC ATATATAATC TTTATCTTGT TTAAGTATGT AATTCTTGTA TGTITGTATA
2581 CGCCTTGCAA ATCAAAAAAC TAGTTGCTGT TTTTGGCATT GTGTTTACGA AATATTTATT
2641 AATATTTTTAA ATTAATTAAT TAAATGTCT TATTTCTCA CAGGAAACAA TATGTATTTT
2701 CTTTCTTTAT AAAATTACAA TGAATTATTT GTTTAAGCT GTCTATTTCC AAGAAACAAA
2761 ACACAAAAAT GATAAATTTA TAATAGTCAC ATAACCTGTC TTACAAAAAA AAAAAAGAAA
2821 GCGAAAAGAA ATGTGACAAC AGAAAATGGT TTTGATAACC AATAAGAATC GACAAAAAAA
2881 AAACCTACTC CACATATACT CTCTCTTCA CTCTTCAGTC TTCCTATTTC AGTCTCGAGT
2941 ATTTACCGA TCTATAAATA CACTCTCTT CTCCACCAA AGTATCATAT CATACCAAAA
3001 ACATAAAGCC AAAATATAAA CACATAAGCC TTTTA